CLAIMS

1. Measuring method on an electric motor with a rotor and a stator for determining the fly height and/or axial play, the rotor being mounted, and in particular fluid-mounted, on the stator, comprising:

   operating the electric motor at a defined measuring speed, at which the rotor is in a specific axial position in relation to the stator, and determining this relative axial position;

   bringing the rotor in a defined manner, with the motor at a standstill, into a first stop position in relation to the stator;

   bringing the rotor in a defined manner, with the motor at a standstill, into a second stop position in relation to the stator, lying opposite the first stop position; and

   respectively measuring the relative axial position between the rotor and the stator in the two stop positions.

2. Measuring method according to Claim 1, wherein the measuring speed corresponds essentially to the nominal speed of the electric motor.

3. Measuring method according to Claim 1, wherein the positional measurement takes place by means of one or more distance sensors.

4. Measuring method according to Claim 1, wherein the stator is kept fixed in place and the relative axial position between the stator and the rotor is measured.

5. Measuring method according to Claim 4, wherein a fixed distance sensor is provided for measuring the relative axial position between the stator and the rotor.

6. Measuring method according to Claim 1, wherein the rotor is pressed against the stator to set the corresponding stop position.

7. Measuring method according to Claim 6, wherein the pressing of the rotor against the stator takes place by means of compressed air.

8. Measuring method according to Claim 7, wherein air pulses are used for pressing the rotor against the stator.

9. Measuring method according to Claim 8, wherein fewer than ten pulses per minute are used.

10. Measuring method according to Claim 1, wherein the rotor is pulled away from the stator to set the corresponding stop position.

11. Measuring method according to Claim 10, wherein the rotor is pulled away from the stator by applying negative pressure.

12. Measuring method according to Claim 10, wherein the rotor is pulled away from the stator by means of a pressure bell.

13. Measuring method according to Claim 12, wherein the pressure bell is cardanically suspended.

14. Measuring method according to Claim 1, wherein the deformation of a part of the electric motor to which force is applied in the stop positions is measured.

15. Measuring method according to Claim 14, wherein a distance sensor for measuring the deformation is provided.

16. Measuring method according to Claim 15, wherein the deformation/distance sensor is disposed coaxially in relation to a central axis of a shaft of the electric motor or in relation to the latter at such a distance that its field of view lies in a projection of the stop face of the shaft in a bearing mount for the shaft.

17. Measuring method according to Claim 15, wherein the deformation/distance sensor is aligned with a base plate of the stator.

18. Measuring method according to Claim 15, wherein a field of view of the deformation/distance sensor is in the opposite direction to a field of view of a distance sensor for determining the relative position between the rotor and the stator.

19. Measuring method according to Claim 14, wherein, in the determination of the fly height and/or the axial play of the shaft by means of stop positions, the deformation of the stop faces caused by force being applied is taken into account.

20. Measuring method according to Claim 1, wherein at first the electric motor is operated at a specific measuring speed, then, with the motor at a standstill, the rotor is pulled away from the stator to set the first stop position, and subsequently the rotor is pressed against the stator to set the second stop position.

21. Measuring method according to Claim 1, wherein at first the electric motor is operated at a specific measuring speed, then, with the motor at a standstill, the rotor is pressed against the stator to set the second stop position, and subsequently, with the motor at a standstill, the stator is pulled away from the rotor to set the first stop position.

22. Measuring device for an electric motor, by means of which an axial position of a rotor which is mounted, and in particular fluid-mounted, on a stator can be determined, comprising:

a pushing and pulling device for bringing the rotor and the stator in a defined manner into a first axial position in relation to each other, in which the rotor lies in a first stop position in relation to the stator, and for bringing the rotor into a second stop position, in which the rotor lies in an opposite, second stop position in relation to the stator.

23. Measuring device according to Claim 22, wherein the pushing and pulling device is operable in a pulsed manner.

24. Measuring device according to Claim 22, wherein the pushing and pulling device is usable to apply compressed air to the electric motor.

25. Measuring device according to Claim 22, wherein the pushing and pulling device is usable to apply negative pressure to the electric motor.

26. Measuring device according to Claim 22, wherein the pushing and pulling device comprises a pressure bell for pulling the rotor away from the stator.

27. Measuring device according to Claim 22, wherein the pushing and pulling device comprises a pressure cylinder for establishing a pressing force of the rotor against the stator.

28. Measuring device according to Claim 22, wherein the pushing and pulling device is cardanically suspended.

29. Measuring device according to Claim 22, wherein a distance sensor is provided for determining the relative axial position between the stator and the rotor.

30. Measuring device according to Claim 29, wherein the distance sensor is fixedly positioned.

31. Measuring device according to Claim 22, wherein a deformation sensor is provided for determining the deformation of a region of the electric motor to which force is applied by means of the pushing and pulling device.

32. Measuring device according to Claim 31, wherein the deformation sensor comprises a distance sensor.

33. Measuring device according to Claim 31, wherein the deformation sensor is fixedly positioned.